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GROUP METHODS AND AFFECTIVE LEARNING

Alton Barbour

ED 424 599

ABSTRACT: This essay is an examination of the efficacy of group methods in the facilitation of learning. It describes and characterizes two learning experiences and reports the findings on some unconventional educational methods. It provides a summary of six principles of learning and reviews some essential literature which compares a variety of teaching methods and learning outcomes; it discusses learning climate and group composition, and advances a rationale for group methods and affective outcomes.

THE POLITICS OF EXPERIENCE

If something is important to you, usually you think about it a lot. You examine it. And sometimes that examination brings you to a different understanding of it and a different way of doing something. One personal example of this is that I did my first formal teaching in 1958 in the English department of a junior high school. Sometimes when my students were working on an assignment that didn't require my supervision, I could leave my room and walk through the hallways of the school. The building was an old one, built at the beginning of the century, and all of the classroom doors were made up of those vertical rectangular panes of glass that the doors in old buildings used to have, so I was able to see inside all of the rooms. What I saw, I believe, was fairly common. What I saw over and over again was teachers talking, teachers talking, teachers talking. Anyone who wants to verify this observation is invited to go to the nearest school building and walk the halls and see what is going on. Whereas I hadn't been much aware of the

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pervasiveness of this behavior when I was a student, I became much more aware of it as a teacher. I thought back to all of those many classes I'd had in the grades and in college, classes that I could no longer remember, and began to connect them to all of those teachers talking. It occurred to me that perhaps if all you do with students is talk, they won't be able to remember much of anything you said afterwards. I didn't want to waste my time and that of my students so completely. I was reluctant to be so forgettable and to leave the students so unchanged. This connection between talking and forgetting raised the question for me of how I might be able to do my teaching in such a way that I wasn't always talking and the students weren't always forgetting what I said.

CANDY FOR THE MIND

In the midst of this concern about the teaching-learning process, an event occurred which greatly impressed me. The Jefferson County School System west of Denver held a summer workshop for teachers, aimed at upgrading their knowledge and skills. The system brought in a few visiting experts. Numerous teachers in the district attended without pay in hopes of learning something they might use in the fall. One visiting expert boasted that he could teach a junior high school class all they would need to know about social studies in two hours. This caused quite a stir, so a fair sized group was there to witness the event. The class was assembled, teachers lined the walls to observe, and a movie camera was set up to record what happened. The visiting expert arrived without a book or folder or lecture or note or scrap of paper. What he did have was two huge bags of candy. He took the first one and walked to the center of the class and burst the bag and the candy rained on the floor. He said, "Go to it kids!" The kids rose out of their chairs and converged on the candy. They swarmed and laughed and fought and grabbed

and shrieked and sobbed and took from one another until finally all of the candy was off the floor. The students who were larger or stronger or more aggressive and those who were more centrally located had an advantage and got more candy. Then, immediately, disputes broke out all over the room about the distribution of the candy, which was obviously inequitable. The expert said, "How do you think we should take care of this?"

Everyone, it seemed, had an opinion, and all wanted to voice that opinion at the same time. They all had an investment in the issue. Some said that whatever they had they had every right to keep. (To the victor belong the spoils, survival of the fittest, etc.) Those who had the most said that, of course. Others said that they were seated too far from the place where the candy had been dumped to be able to get to it easily. They believed they had been unfairly penalized simply because of their location, which was no fault of theirs. They said that they were all equally members of the class and deserved to share equally in the resources. Only those who had very little candy said that, of course. The quarrel continued between the "haves" and "have nots" until they discovered that they couldn't deal effectively with the problem if everyone talked at once. They had a problem of unequal distribution of resources and had to have some systematic way of talking about it.

They began to make some rules about talking. They decided that just one person at a time should be able to talk and that no one should be allowed to interrupt that person. That necessitated that someone should decide which person got to talk so they picked a chairperson to indicate who was to talk. They didn't want to hear just from one side of the question, so they made a rule that the chairperson would call someone on one side and then someone on the other side of the issue. The students, who knew nothing about the General Henry M. Robert who defended Washington D.C. from the Confederates in the

Civil War and wrote a little book about meetings, evolved something remarkably similar to parliamentary procedure and standards for the conduct of deliberative assemblies. They made proposals and argued and voted and went along with the majority and were willing to act on their decisions.

When the conduct of meetings issue was solved, they returned again to the problem of their economy, and (to make a long story short) worked out something very much like the graduated income tax. They took the most from those who had the most. They distributed to those who had the least. Then they sat back with considerable pride. They had devised a satisfactory system of government for dealing with disputes and decision making and evolved an economic system to go with it, and it had only taken an hour and a half. Whether they could have done this if they hadn't the least exposure to those systems in their culture I don't know. They appeared to believe they had done it themselves. There may be some value in reinventing the wheel now and then just to understand how the original inventor may have gone about it. The visiting expert had stood watching the whole event occur, and when they were all done, he walked to the center of the room with the second bag of candy and tore it open and threw it in the air and said, "Here it is kids!" Bedlam! The whole thing happened again. Kids ran and yelled and cried and scrambled for the candy. Chaos! Then they began the painful process of reorganizing their government to take care of this second calamity. Since they had gone through it once, the second time went faster. They polished it off in a half an hour and seemed pretty smug. Their system had been tested and had been proven to work effectively. They were more secure and self confident this time. They could take care of themselves.

The visiting expert (who had promised, as you'll recall, that he could teach them all

they would need to know about social studies in two hours) said good-bye and departed. The teachers who were observing, stood around in stunned silence. They had watched a teacher who had provided a dramatic learning experience in which every student in the room was involved, but he had hardly said a word the whole time he was there. The students had learned very differently than if someone had told them about economics or government, or if they had read a book about it. They learned that politics is about who gets what and that a government by talk is difficult to manage, but that it is better for the people involved than a government by force or privilege. It had been a frustrating experience, but they had struggled with it and learned something valuable about the social world and how it operates. The process the kids went through in forming their own government and dealing with their resources is not much different from what adults have gone through in the past to accomplish virtually the same thing. Most importantly, it was a learning experience that I remember and I am confident that the class will remember too.

I thought it important that the teacher provided the stimulus, that there was a calculated point to the event, (it wasn't just a meaningless "happening") and that what the class already knew was pooled and utilized in the learning experience. That is, they learned from the experience, but they also learned from each other. Also, when the class was frustrated or stuck or angry, the teacher didn't rush in to relieve them from their frustration. They were involved emotionally in the activity. Being frustrated was part of the learning experience. But they were allowed to be frustrated and to find their own solutions and resolve their own frustrations. Most importantly, the students didn't learn alone or individually, they all learned together. It was the group learning aspect of this event which made it so powerful. And it is perhaps what made it so unusual in a

classroom.

A SINGULAR FAILURE

Traditionally, the schools have not been organized around doing learning in groups. Quite the opposite. They have been organized around individual effort and individual achievement (Zander, 1974). Individual need for achievement is a much studied personality variable and has long been considered a key motivator for good students. It is what we sometimes call ambition. The ideal student has often been seen as a self-centered striver who succeeds by his or her own efforts and initiative. The idea of students talking to each other in order to achieve together has been rejected in favor of orderly classrooms in which the student could listen quietly to the teacher about the "content" and then work alone. Cooperating with another student is usually interpreted as cheating and is rigorously discouraged. Perhaps this emphasis on learning alone is because of the long-standing cultural endorsement of the self-reliant rugged individualist. Perhaps it is because quiet orderly classrooms are easier to manage.

In any case, individual initiative and responsibility have been encouraged and cooperation has been discouraged. The schools seem to believe that if individuals can't succeed alone and on their own initiative, they can't succeed at all. So, in that kind of setting, many students who aren't strong individual achievers don't succeed. Because they can't succeed alone, they fail alone. For them, school is an unpleasant experience and so is learning, something to be suffered and endured rather than something to be enjoyed. The schools as well as most business organizations have been designed for individual achievement. Employees are often under pressure to compete with one another rather than cooperate. That being the case, we might have been missing out on

something. What that might be will take some explaining, but first there is the issue of the quest for the magic bullet.

BULLETS FOR THE BRAIN

Must we really pay any attention to learning in groups? Instead, isn't there some kind of "nontraditional," unorthodox, magical and easy way to put information directly into people's brains with no effort whatsoever if we could only find it? Isn't there a secret indirect way to learn calculus or French without bothering with numbers or vocabulary? In the past, certainly, there have been a lot of people who claimed to have had "the answer" to that question, because if we only knew "the answer" we wouldn't have to look any further. The search for "the magic bullet" has led to a lot of faddishness in education, with another "answer" every couple of years or so. Think of "programmed learning" or "learning contracts" or "teaching the whole person" or "learning across the curriculum" or "right brain-left brain learning" or "learning objectives" or "curriculum enrichment," or "competence accountability" or the recent concern about computers in the classrooms. Each for a while has been "the answer," and now no longer is. Each supposed answer is now just a little piece of a much bigger puzzle. Experienced teachers have file drawers crammed with "the answers" of past decades. And still we continue to look.

The U.S. Army has also been searching for ways of enhancing the performance of soldiers and technicians to work together cohesively in difficult conditions, and it has looked at a variety of methods which have been said to improve performance, including some unconventional ones. These would include sleep teaching, right-left brain learning, meditation, biofeedback, parapsychology and neurolinguistic programming. The Army

asked the National Research Council (NCR) to assess the scientific validity of the claims made for each of these and other methods. The NCR released a scientific report on enhancing human performance which tested these methods (See Science News January 2, 1988). The NCR found that biofeedback can reduce muscle tension but not mental or emotional stress, and that motor skill learning can be enhanced by mental image practice such as envisioning the moves of an athlete as he/she performs. An example would be to imagine doing a golf swing before one actually does it physically. However, the NCR said that there was no support for parapsychology or neurolinguistic programming or methods which are said to enhance right and left brain activity. There is no evidence that people learn when they are truly asleep. NCR Chairman, John Swets, said that there are no easy ways or quick fixes for helping people to learn or perform more effectively. In spite of the promises made for them, none of these methods can claim to be "the answer." If there is any answer about methods which enhance learning, it must come from somewhere else.

SIX PRINCIPLES OF LEARNING

Many persons have attempted to describe the characteristics of ideal conditions which facilitate learning, most notably J.L. Moreno, Carl Rogers, Roy Menninger and Rollo May. There is by now an accumulation of data about ideal conditions for learning, which has been synthesized into a well-articulated set of principles about the context in which learning is facilitated (Barbour and Goldberg, 1974). Some of the principles have grown out of studies of the interactions between client and therapist in counseling sessions because those are growth sessions of a very special kind. Also because very good learning sessions or experiences seem to have a therapeutic quality to them. They make

people more whole and more healthy and more mature. They change people for the better. Others derive from the studies of interpersonal interactions in small intensive learning groups. Still others are derived from an accumulation of research about human growth and development. Those who have studied client-therapist relations and small group relations and human development have noted well the characteristics of the environment in which change, growth, and learning are most likely to take place. From these observations, a set of principles have evolved which describe not so much how learning typically takes place, but how it would take place in ideal conditions. They are as follows:

1. The learner must be actively involved. In some way, the learner must be caught up in the experience, cognitively, emotionally and perhaps even physically. The learner ought to be doing something, not just passively observing something. If possible, the whole being of the learner should be involved.
2. That which is learned much touch the self. At some significant level, what is being learned must be relevant to the life experience of the learner, so that the learner knows that what is being learned has some personal significance. In this way the learner should be aware that what is being learned is not merely interesting, but personally important, that it makes a personal difference.
3. The person who facilitates the learning (teacher, leader, therapist) must be authentic and accepting. The facilitator must communicate to the learner that he/she is genuine, rather than false, involved rather than distant, and accepting rather than uncaring.

4. The learning should involve a memorable insight. Some new perspective or understanding should be retained from the learning experience. The insight need not be dramatic, but should at least clarify or reframe present knowledge.

5. The facilitator should draw upon the previous knowledge of the learner. Instead of assuming that the learner is a blank slate or empty jug, the facilitator should draw on the existing knowledge of the learner and help to forge new insights based on previous knowledge. Completely new information is often baffling to the learner. We understand best what we are already familiar with, so it is more intelligible when new information rides in on old information, when the unknown is integrated with the known.

6. The facilitator must relate to the learner. Learning is rarely a solitary experience. It usually takes place in the presence of others and is mediated by others. We may get personal insights, but we get them best with others and through others. We are social creatures and much of what we do takes place in a social milieu, including learning. Most of life's most rewarding and most enjoyable experiences are best shared, and learning is one of them. The six principles identified above are synthesized in a portion of a lecture given by Carl Rogers (1966) at Harvard University:

> "When I have been able to transform a group -- and here I mean all of the members of a group, myself included -- into a community of learners, then the excitement has been almost beyond belief. To free curiosity, to permit individuals to go charging off in new directions dictated by their own interests, to unleash curiosity, to open everything to questioning and exploration, to recognize that everything is in the process of change -- here is an experience I can never forget. I cannot always achieve it in groups with

> which I am associated, but when it is partially or largely achieved, then it becomes a never-to-be-forgotten group experience. Out of such a context arise true students, real learners, creative scientists and scholars and practitioners, the kind of individuals who can live in a delicate but ever-changing balance between what is presently known and the flowing, moving, altering problems and facts of the future. We know...that the initiation of such learning rests not upon the teaching skills of the leader, not upon his scholarly knowledge of the field, not upon his curricular planning, not upon his use of audiovisual aids, not upon the programmed learning he utilizes, not upon his lectures and presentations, not upon an abundance of books, though each of these might at one time or another be utilized as an important resource. No, the facilitation of significant learning rests upon certain attitudinal qualities which exist in the personal relationship between the facilitator and the learner."

If we examine the six principles it becomes apparent that some of these are ideal conditions that are not easily obtainable. We cannot guarantee that the teacher will be genuine, authentic and accepting; important as they might be, genuiness and authenticity are not usually a part of job descriptions. Those personal qualities may or may not be present and whether that person will be accepting is an unknown. We cannot guarantee that the learning experience will touch the self or result in a memorable insight because learning experiences are not always successful and because what is relevant to the life of one student may not be relevant to the life of another. These are desirable conditions, but whether they will be present in any given learning experience is often a matter of chance. What we do have some control over is whether we can use methods which involve the

students actively, draw on previous knowledge, and create relationships among the learners. And if we do this then will the students naturally learn more or better? Not necessarily.

COMPARING TEACHING METHODS

An amazing bit of information comes to us from the University of Oregon. There are numerous investigations about teaching and learning, which compare the effectiveness of one method of college teaching against the effectiveness of another method. Robert Dubin and Thomas C. Taveggia, (1968) at the Center for the Advanced Study of Educational Administration, decided to examine and summarize as many as they could find which used the same outcome measure. Different outcomes would not have allowed them to discriminate between the different methods. The outcome measure they selected was "cognitive learning as measured by final tests." They searched through the data from ninety-one comparisons of different methods of college teaching, which had that outcome variable. The research went back as far as 1924. The comparison of methods ranged from lectures to tutorials to discussions including large and small groups to supervised and unsupervised independent study. They concluded that <u>there were no significant differences in the effectiveness of one method over another</u>.

This is an unsettling finding. If no method is better than any other method in terms of effectiveness, it suggests that it doesn't really matter which method is used. They all produce roughly the same results, so why bother? There are a couple of possible limitations in the investigation. One is that only cognitive learning was examined, and learning may involve more than just cognition. We will return to that idea later. A second limitation is that the outcome of the methods was judged by final tests.

Achievement on such tests is sometimes more dependent on the reading of the textbook than the use of any method in the classroom. What went on in the classroom, in fact, may have been totally irrelevant to the substance of the final examination. Given those possible weaknesses, the conclusions are still striking. But, according to the authors, what seems most important is not the very convincing findings, but the persistent refusal of the researchers who performed the original research to be convinced by their own results. Dubin and Taveggia report that the investigators all seemed to have started their investigations with a philosophical bias which favored one method over another and set out to corroborate that conviction with scientific evidence. When the evidence failed to prove the point, they brushed it aside and continued to believe what they had originally believed. Dubin and Taveggia say that the time has come to put an end to this self-delusion. Whatever it is that makes some students learn more cognitively than others, it seems not to be the size of the class nor the method of teaching. If that is the case, then it must be something else.

WHY USE GROUPS AT ALL?

Consider what has been said thus far. That mainly teachers talk to students. That students forget most of what they are told. That many students do not learn well alone, and that the schools are not set up to help them. That there is no magical effortless method for learning. That there are ideal conditions for learning, but some of them are not easy to come by. That no method is better than any other method for cognitive learning. Given all of this discouraging information, why should one care about teaching-learning methods all? Why might we want to use groups for learning instead of just letting people do their work alone just as they always have? There is some research about

groups which is relevant to this question. It says that group methods do matter, but not necessarily in the ways we might imagine.

There is a classic article about this. Irving Lorge (1958) and his colleagues made an extensive and critical review of the literature comparing the quality of individual and group performance from 1920 through 1957, including learning groups. They said, in general, in the evaluation of the relative quality of outcomes produced by groups in contrast to the outcomes produced by individuals, the group was superior. This says that quality of product (such as problem solving or decision making) is one reason for using groups. The proponents of the creative problem solving method called brainstorming have been telling us for fifty years that one has far more ideas in a group than alone and that they are better ideas (Osborn, 1953). Ladd Wheeler (1970) has catalogued the social psychological research on interpersonal influence going back to 1897, which describes the powerful influence that the presence of others has on a person. Most of this extensive review suggests that the presence of others strongly influences attitudes, standards, values, behaviors, and self-evaluation. But much of the time that influence is so subtle that it is unnoticed. In the early 1940's Kurt Lewin (Lewin, 1943, Bennett, 1955) engaged in a number of experiments to discover the influence of various methods on learning, behavior and attitude change. His results demonstrated that group methods were effective for gaining acceptance of an idea and converting that acceptance into actual behavior. That is, groups had an influence on the attitudes of its members and what they would actually do with reference to the idea they discussed. Geier and his colleagues (1970) also found that small groups significantly increased commitment. This says that both the quality of

what is produced and the acceptance by the members of what the group has done as well as attitude and behavior change are reasons for using groups.

Roy Wood (1965) experimented with the effects of three styles of training on small group effectiveness. He compared teacher-critic, encounter method, and instrumented approaches. He discovered that the instrumented approach (one in which there was no teacher present and groups operated with no designated leader performing tasks based on instructions given to them on a piece of paper) was the most effective of all. The interaction was higher, the activity was equal to or greater then that of the other methods, and the sentiment (affect, feeling, emotion) was greater in the instrumented groups. One interpretation of these results is that affective learning is enhanced in groups in which there is no status figure or in which the teacher is not in a central dominant role.

Myron Chartier (1971) performed an experimental investigation of some teaching methods and cognitive learning outcomes. Just as the Dubin and Taveggia research would have predicted, none of his six hypotheses on cognitive learning outcomes were supported. What Dr. Chartier did discover, however, was that subjects experiencing group discussion and group "simulation" were more satisfied and enjoyed the learning experience more than those without group discussion or simulation or both. So even if there was no difference in cognitive learning, there was a significant difference on the affective (satisfaction/emotional) level. This finding will not matter to those who are only concerned about cognitive learning, but will be important to individuals who care about whether learning is satisfying or enjoyable, regardless of whether it is effective in promoting cognitive change.

There is another aspect to the Chartier investigation which might easily be overlooked. It is a wonderful example of the way in which the newest idea is often an old idea with a change of clothes and a new name. What was this "simulation" condition that the participants experienced in the Chartier investigation? The simulation condition required that the participants assume the roles of others and act them out in a scene as if the event were actually occurring. So simulation, this seemingly new method on the cutting edge of educational progress, is actually the same roleplaying that J.L. Moreno began doing when he was a young man in the parks in Vienna more than eighty years ago. Chartier has provided empirical evidence that working in groups was more enjoyable than working alone and that roleplaying had a powerful positive affective outcome for the learners. Sometimes it is useful to get information which confirms what already know from other sources. Occasionally there are important indirect influences in groups which are overlooked, but which have an effect on learning outcomes. One of these is the emotional climate or atmosphere in which people are supposed to learn and another is how the learning groups are composed. Let's consider each of these.

MICKEY MOUSE AT THE POLICE ACADEMY

Pressure and stress as well as ease or enjoyment of learning are called "learning atmosphere" topics, and research has turned up some interesting and unexpected results about them. In the past, a "good" academic program and a "difficult" academic program have been thought to be synonymous. A program that the students enjoyed was believed to be an "easy" and "weak" program. An "easy" program (as everyone knows) was "Mickey Mouse" because it lacked "rigor," while a "hard" program was "good" because it was difficult. It was believed that students (who are supposed to be naturally lazy

anyway) would work harder in a difficult program and loaf in an easy one. Stressful programs were challenging and enjoyable programs were undemanding. So naturally, a good program was one in which the student was under constant pressure and a weak program was one in which the student was largely free from stress and having fun. Academicians have come to believe that you can tell the quality of a program by the degree of pressure that the students are under. Since "hard" is "good" then stress and pressure are indicators of goodness. Or is that so?

Because police officers represent authority and are required as a function of their jobs to exercise it, there has been a longstanding tradition that the training of police officers be authoritarian and stressful. The training typically has been adapted from the military model. These have been high stress programs with strict military atmospheres, double time marching between classes and as much pressure as the police candidates could tolerate. The Los Angeles Sheriff's Department had always trained their police candidates that way, but they began to want scientific evidence that this was, in fact, the best kind of training for future officers of the law. Assistant Sheriff Howard H. Earle persuaded Sheriff Peter Pitchness to let him conduct a controlled experiment (See Time, July 31, 1972).

He took 74 candidates at the beginning of a sixteen week course and divided them into pairs matched by age, marital status, race, education, and past experience, and picked one member of each pair for either stressful or nonstressful training. The non-stress group experienced something much like a college campus atmosphere. The course content for both groups was the same; the only difference for each group was the stress variable. It was anticipated that the high stress group would do the best. Supervisors and trainees

in both groups completed questionnaires to aid in the evaluation of the two methods. When the training was over, and the results of the data from the stress and non-stress groups were compared, it became immediately apparent that the non-stress group did better in everything. Their knowledge was better. Their attitudes toward work were better. Their marksmanship was better. They got along with their superiors and one another better. They even wore their uniforms better. The experiment was then repeated with another group of trainees and the conclusions were the same. As a result of this research, the Los Angeles County Sheriff's Department changed its way of training from the traditional rigidly authoritarian military model to the less stressful collegiate model.

Let's consider these results. From this experiment it is apparent that though stress can make a program "hard" it doesn't necessarily make it "good." Training or learning can be challenging or interesting and productive without also being weak. A program is not necessarily improved by additionally imposed stress. Though hard and stressful may go together, stressful and good may not. It is not too difficult to think of hard-poor teachers and hard-weak programs. Konrad Lorenz (1974), the Austrian Nobel Prize winner in Physiology and Medicine, has some interesting insights on this issue. He said that in an unthreatening environment an organism will "increase the extent of its excursions." It will travel and explore and inquire and discover, and presumably it will learn. In a stressful environment an organism will take a defensive posture and attempt to maintain itself against threat. It will restrict the extent of its excursions. It will prepare to defend itself. Lorenz made his distinguished career comparing the behaviors of animals and the behaviors of humans, and his comments apply to both groups. When we are threatened

or under pressure, we do not become more efficient learners. Quite the opposite. Usually we are less articulate, we think less well and remember less well and we make decisions poorly. Even very bright people in highly stressful situations become less able to think. All one has to do to make a good learner a less efficient learner is to impose the stress variable. We learn best not when we are in a defensive posture, anxious about what is going to happen next. We learn best in a nourishing atmosphere, free from threat, where we can try things out without fear of punishment, where can travel and explore and inquire, where we can increase the extent of our excursions.

THE ASSEMBLY EFFECT

Do all married couples have an equal chance at a successful marriage, or do some have a tremendous advantage and others a disadvantage from the start, depending upon who the two partners are? If one accepts the "assembly effect" principle, some marriage couples have a clear advantage and others are doomed at the outset. The "assembly effect" says that variations of group behavior, including productivity, are at least in part a function of group composition, or the combination of people in the group. Different combinations of people bring about different outcomes. So just as marriages are affected by the composition variable, so are small learning groups.

There is a fascinating investigation about group composition and productivity done in by Rosenberg, Erlick and Berkowitz (1955). In the study, there were samples of nine persons drawn from a large pool of U.S. Air Force enlisted men. Each group of nine was sub-grouped into three groups of three. There were fifty-six total trials with the task. The membership of each group of three was shifted from trial to trial so that each person in the sample group of nine worked with each other person in the sample. Each triad

differed in composition from each other triad on each trial, although any given arrangement included the same nine individuals as any other arrangement. The task was ingenious. It was a platform and cone apparatus with an outside track, which spiraled uphill through five levels from a hexagonal base with six handles to a circular receptacle at the top. Imagine a six-sided coffee table with handles on each side, but no legs. On this moveable platform was the cone like a volcano with the spiral track. The object was to have three people manipulate the apparatus so that a golf ball would travel up the channel on the outside of the cone to the receptacle at the top. An error was recorded each time the ball fell off. A performance score was recorded for attainment of the goal and for the level the ball reached before falling off. The results verified the assembly effect hypothesis, that individuals contribute differently to the outcome depending on the particular other people with whom they are grouped. Another way of saying this is that no matter how good you are personally, you and your group will do better or worse depending on what the combinations of membership are in your group. Knowledge of this one particular investigation emphasizes the importance of sociometry, or the science of investigating group composition, structure and relations. Using sociometry, one can if one wishes to, create (assemble) groups which are cohesive and which enhance performance including learning.

THE SOCIOEMOTIONAL LEARNER

Where does this information finally lead us? It says that we are powerfully influenced in many ways by the presence of others, sometimes in ways we are not fully aware of. It says that generally groups produce a superior product to that of individuals, including more and better ideas, and that the group members accept and are committed to what they

have done together. (We should not be too surprised at the continuing success of Outward Bound group training experiences for people of all backgrounds and ages.) It says that affective change is greater in groups in which the teacher is not in a central dominant role, and that satisfaction and enjoyment are greater in groups which role play and discuss than those which do not. Some research also demonstrates that unthreatening, nourishing, low stress atmospheres are better for students and that who a person works with has an influence on how successful that person might be. Some new words have surfaced in this literature review that we have not previously seen associated with the cognitive learning reviews, words such as "influence," "presence," "acceptance," "commitment," "interaction," "sentiment," "satisfaction," "enjoyment" and "affect." What they refer to is the emotional part of our make up which may turn out to be more important to learning than we had formerly supposed.

We humans are certainly thinking creatures with frontal, temporal, occipital and parietal lobes and a cerebral cortex, but we are not only processors of information. For as long as we have been mammals, we have also had a limbic system in our brains integrated to the ways in which we remember, and have been emotional/feeling creatures as well. So we are both thinking and feeling creatures. Though we may try, it is hard for us to disengage our feeling from our thinking. But we are not only thinking-feeling creatures, we are social creatures as well, and virtually everything we do all of our lives we do with others. It seems only natural that we might prefer to learn that way, and that learning alone is more difficult and less enjoyable for many of us. While there may be an individual need for achievement within each of us, few have imagined that there might also be a parallel need for achieving with others. Group methods may not make a significant

different in cognitive learning, but apparently they do make a difference in some other areas which seem to matter. When we are with others we can assist, cooperate, question, encourage, consult, request, compliment, disagree, and interact. And what comes from this?

The answer is that a relationship does. It would be ideal, as Carl Rogers suggests, if each learner could have a relationship with each teacher, but depending on the nature of the teacher, the nature of the student, the class size and the time constraints, that might not be easy or even possible. But if we are allowed to spend time with other learners, particularly in compatible learning groups, we can have a relationship with those co-learners. We can have partners, allies, supporters, friends, companions, comrades, and the kind of nourishing atmosphere that Konrad Lorenz described. However much we may discover about the intellect and the cognitive processes, I would argue that learning involves more than just cognition and is often as much a matter of the "heart" as it is the "head," as much about feeling as it is about thinking, and that affective dimension of learning is enhanced by the facilitated presence of others.

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